

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Daniel Morath on July 6, 2009.

The application has been amended as follows:

In the claims:

1. (Currently amended) A method of inducing or enhancing production of at least one secondary metabolite by plant cells, said method comprising:

transforming plant cells with an expression vector comprising an expression cassette comprising a gene encoding an ABC-transporter;

wherein said ABC-transporter comprises a Walker A box, a Walker B box, and a Nucleotide Binding Fold;

wherein said ABC-transporter functions to transport at least one secondary metabolite in plant cells;

selecting transformed plant cells having an induced or enhanced production of at least one secondary metabolite; and

propagating such selected transformed plant cells; and
wherein said gene encoding an ABC transporter comprises a polynucleotide sequence having at least 91% identity to the polynucleotide sequence of SEQ ID NO:1.

7. (Currently amended) A method of stimulating the production of secondary metabolites by plants, the method comprising:

transforming said plants with an expression vector comprising an expression cassette comprising a gene encoding an ABC-transporter;

wherein said ABC-transporter comprises a Walker A box, a Walker B box, and a Nucleotide Binding Fold; and

wherein said ABC-transporter functions to transport at least one secondary metabolite in plant cells;

selecting transformed plants based upon enhanced production of secondary metabolites; and

propagating such selected transformed plants; and

wherein said gene encoding an ABC transporter comprises a polynucleotide sequence having at least 91% identity to the polynucleotide sequence of SEQ ID NO:1.

10. (Currently amended) A transgenic plant cell culture displaying an enhanced production of at least one secondary metabolite, wherein said transgenic plant cell is transformed with an expression vector comprising an expression cassette comprising a gene encoding an ABC-transporter;

wherein said ABC-transporter comprises a Walker A box, a Walker B box, and a Nucleotide Binding Fold; and

wherein said ABC-transporter functions to transport at least one secondary metabolite in plant cells; and

wherein said gene encoding an ABC transporter comprises a polynucleotide sequence having at least 91% identity to the polynucleotide sequence of SEQ ID NO:1.

12. (Currently amended) A transgenic plant material selected from the group consisting of a plant, plant cells, plant seeds and plant progeny, said transgenic plant material capable of an enhanced production of at least one secondary metabolite, said transgenic plant material transformed with an expression vector comprising an expression cassette comprising a gene encoding an ABC-transporter;

wherein said ABC-transporter comprises a Walker A box, a Walker B box, and a Nucleotide Binding Fold; and

wherein said ABC-transporter functions to transport at least one secondary metabolite in plant cells; and

wherein said gene encoding an ABC transporter comprises a polynucleotide sequence having at least 91% identity to the polynucleotide sequence of SEQ ID NO:1.

16. (Currently amended) A process for producing a plant cell exhibiting an enhanced production of at least one secondary metabolite, said process comprising:

transforming a plant cell with an expression cassette comprising a gene encoding an ABC-transporter;

wherein said ABC-transporter comprises a Walker A box, a Walker B box, and a Nucleotide Binding Fold;

wherein said ABC-transporter functions to transport at least one secondary metabolite in plant cells; and

selecting transformed plant cells exhibiting enhanced transport of said at least one secondary metabolite into a vacuole; and

wherein said gene encoding an ABC transporter comprises a polynucleotide sequence having at least 91% identity to the polynucleotide sequence of SEQ ID NO:1.

19. (Currently amended) An isolated polynucleotide useful for producing a plant cell exhibiting an enhanced production of at least one secondary metabolite, said isolated polynucleotide comprising:

a first sequence of nucleotide bases constituting a means for inducing or enhancing production of at least one secondary metabolite in plants or plant cells, and

a second sequence of nucleotides bases, operatively positioned with respect to said first sequence, constituting a means for promoting expression of said first sequence; and

wherein said isolated polynucleotide comprises a polynucleotide sequence having at least 91% identity to the polynucleotide sequence of SEQ ID NO:1.

21. (Currently amended) The isolated polynucleotide sequence of claim 15, wherein the isolated polynucleotide sequence ~~comprises~~ encodes the polypeptide sequence of SEQ ID NO:2.

22. (Currently amended) A method of inducing or enhancing production or cellular secretion of at least one endogenous secondary metabolite by a plant cell, the method comprising:

transforming the plant cell with an expression vector comprising an expression cassette comprising a gene encoding an ABC-transporter, wherein said ABC-transporter comprises a Walker A box, a Walker B box, and a Nucleotide Binding Fold, and functions to transport at least one secondary metabolite in plant cells;

wherein the secondary metabolite is an endogenous metabolic product of the plant cell, and is transported from the cell to the extracellular space;

wherein the amount of secondary metabolite recoverable from the cell is increased;

selecting a transformed plant cell having an induced or enhanced production of at least one secondary metabolite; and

propagating such selected transformed plant cell; and

wherein said gene encoding an ABC transporter comprises a polynucleotide sequence having at least 91% identity to the polynucleotide sequence of SEQ ID NO:1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUSSELL KALLIS whose telephone number is (571)272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Russell Kallis/
Primary Examiner, Art Unit 1638
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